

History

The City of Gary lies within the Northwestern Morainal Natural Region of Indiana which is one of the most biologically diverse regions in the United States. Contributing to the biodiversity is the convergence of three major ecological biomes - tallgrass prairie, eastern deciduous forest, and boreal forest remnants in northwestern Indiana. Approximately 1300 plants are reported from this region including desert plants, arctic species, prairie species, and pine forests. Twenty-four significant natural communities are found in northwest Indiana including sedge meadows, fens, wet and sand prairies and savannas. The physical features and natural resources of this region are related to the formation of the Great Lakes and the recent Wisconsin glacier period. Approximately 14,000 years ago, the glaciers began to retreat and advanced and retreated five separate times creating a series of moraines along the southern part of Lake Michigan. The resultant lake level changes created the southern Lake Michigan Lakeplain with sand dunes, wetlands, beaches and savannas.

The opening of U.S. Steel started a period of industrialization and growth in Gary. Prior to this industrialization and resultant commercial and residential development, Gary and the northern part of the Morainal Natural Region were characterized by a dune and swale system that includes upland dunes interspersed with wetland swales. Other related habitats included upland black oak savannas, sand prairies and barrens. The City of Gary is currently characterized by residential areas, commercial areas and light/heavy industrial areas interspersed with natural areas, some of very high quality.

Fire and hydrology were the major environmental drivers of the original northwest Indiana ecosystem. Human settlement of the region has impacted the hydrology and fire components of the ecosystem. Much of the original vegetation of Gary has been urbanized, and the natural areas remaining have disturbed natural processes because of the hydrology changes and fire suppression. The high biodiversity of northwest Indiana and the City of Gary remains in a scattered, often unconnected system of natural areas within the highly developed landscape. Natural areas and wetlands are somewhat limited in size and extent due to existing development. Environmental corridors connecting these systems are important to retain the unique biodiversity of the region.

The Grand Calumet River and general northwest Indiana area exhibit the effects of a century of industrial activity. At one time, the Little Calumet and Grand Calumet Rivers were two reaches of the same river, the Great Konomick River. Today they are separate rivers that have both undergone multiple man-made changes. The channel of the Grand Calumet River was altered around 1886 to be less sinuous and was moved several hundred feet south to accommodate development in Gary Harbor. The Little Calumet River was also straightened in the early 1900's. Large areas of Lake Michigan were filled for development, usually with slag, totaling an estimated 3,689 acres of lake fill. According to the Northwest Indiana Environmental Initiative

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Action Plan (1996), five to ten million cubic yards of contaminated sediments cover the bottom of the Grand Calumet River and Indiana Ship Canal with 150,000 cubic yards entering Lake Michigan yearly, the regions water supply. The Grand Calumet River receives an estimated 90 percent of its flow from industrial and municipal discharges.

Natural Areas

The City of Gary has several natural areas with environmental and recreational functions and values. These have been previously outlined in the Gary Green Links Master Plan and the 2001 Open Space Study. The locations of the protected areas and unprotected core natural areas and other critical habitats are presented in Figure 7.1. The following section provides a brief description of the protected areas and some key unprotected areas.

Federally Owned Lands

Area 1: Indiana Dunes National Lakeshore/Miller Woods

The Indiana National Lakeshore owns and operates approximately 1900 acres of the West Unit in the City of Gary including the Miller section of Gary. The West Unit of the Indiana Dunes National Lakeshore includes sections in Ogden Dunes and Gary. Figure 7.1 provides the location of this federally owned land which is generally located north of U.S. 12/20 and south of Lake Michigan and U.S. Steel. The bulk of the property is within the Miller section of Gary and includes dune and swale habitat, interdunal ponds, habitat for the federal protected karner blue butterfly (*Lycaeides melissa samuelis*) and over 400 plant species. The Indiana Dunes National Lakeshore is actively managing portions of the property in the Miller for the butterfly. They also have a program for eradication of non-native species. The narrow portions of the National Lakeshore are located west of I-65 between railroad corridors and are not as actively managed. In addition, the Douglas Environmental Center, a part of the National Lakeshore, is located at 20 North Lake Street in Gary and provides environmental education opportunities for adults and children.

The Shirley Heinze Environmental Fund (SHEF) own over 180 lots in the Miller section of Gary comprising approximately 20 acres. These properties include wetlands, dunes, interdunal ponds and ravines which are protected and restored by the SHEF.

County Parks

Area 2: Lake Etta County Park

The 94-acre Lake Etta County Park is located on the south side of Gary, south of 29th Street between Clark Road and Burr Street. This parcel is managed for active recreation by Lake County Parks and Recreation Department (LCPRD) and provides trails, several fish ponds, open play areas and picnic areas. The park is owned by the Little Calumet River Development Commission. Some native vegetation remains in the open areas of this county park, primarily the southern boundary of the park where the Little Calumet River is located.

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Area 3. Gibson Woods

Gibson Woods is a 179-acre dune and swale complex located primarily in Hammond, but with a small portion located south of U.S. 20 and east of Cline Avenue in Gary. This state nature preserve has one of the largest undissected dune and swale ridge outside of the Indiana Dunes National Lakeshore. The property is owned by the Nature Conservancy and managed by LCPRD. Amenities include trails and a nature center. Gibson Woods has great plant diversity with 273 species being reported.

City Parks

Area 4: Lake Michigan Shoreline and Marquette Park

Area 4 is located on the east side of Gary in the Miller section and includes Marquette Park and the Lake Street beach. Marquette Park is known for several special features including the Gary Bathing Beach (Aquatorium), Recreation Pavilion, Patterson Island and all surrounding beach areas, dunes, and park areas. This open lakefront area continues to the eastern to the City of Gary boundaries. This area is currently open space with sand substrate and limited vegetative cover. The Marquette Park lagoons are located within Marquette Park and form the headwaters of the Grand Calumet River. Habitat reconstruction and improved public access are the focus of restoration efforts in this area. The eastern lagoon will link with the planned Gary Green Link which is a proposed trail linking the Grand Calumet River, the Little Calumet River and nearby natural areas. The piping plover (*Charadrius melodus*), a federally endangered species, has been reported from the Lake Street Beach during migration.

Area 4 is the best open space area with natural area potential located on the Lake Michigan shoreline in the City. As presented in the Marquette Reinvestment Plan (2005), protection and open space near Lake Michigan is important from both an environmental and social viewpoint.

Area 5. Brunswick Park and Brunswick Center Savanna

Brunswick Park is a 49-acre property located on the west side of Gary at 700 Clark Street. The small park includes active recreation facilities such as tennis courts and baseball fields. The adjacent natural area is located east and north of the park. This property features an intact remnant of the dune and swale topography that characterized the lakeshore region of Northwest Indiana in the past. Also present are remnants of prairie, wetlands, black oak sand savanna with several plant species.

Other Properties

Area 6: Clark and Pine Nature Preserve

Located on the northwest side of Gary on the west side of Clark Road, the Clark and Pine nature preserve is managed by the Indiana Department of Natural Resources (IDNR). This 40-acre property is managed for natural flora and fauna and represents one the highest quality dune and swale habitats remaining. It contains some of the highest plant biodiversity in the state of Indiana and has the highest concentration of state rare and endangered species in the state. This site contains high quality dry and mesic prairie, marsh and pond communities in a system of linear sand ridges and depressional swales. Access to the site is by permission only. Clark

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and Pine Dune and Swale is a similar unprotected property located south of the nature preserve; however, it is not as high quality and may have contamination issues.

Area 7. Pine Station Nature Preserve

Formerly known as the “bonji pits”, this 280-acre property is located on the east side of Clark Road across from the Clark and Pine Nature Preserve. It contains approximately 50-acres of remnant dune and swale and over 100 acres of sand mined dune ridges. This property is undergoing restoration by the IDNR. The preserve extends south past the Grand Calumet River. Several ponds and large wetland areas are located within this area. Restoration of this site is a high priority for the IDNR.

Area 8. Ivanhoe Nature Preserve

The 114-acre Ivanhoe Nature Preserve has a large dune and swale community with 297 species reported and several habitat types including savanna, dry and mesic sand prairies and buttonbush swales. The preserve is owned and managed by the Nature Conservancy and access is by permission only. It is located south of the Indiana Toll-Road (I-90) and east of Cline Avenue. Similar unprotected properties continue to the south including Ivanhoe Dune and Swale South and Ivanhoe Dune and Swale West. The SHEF owns 10-acres of the Ivanhoe Dune and Swale South property located south of the Ivanhoe Nature Preserve.

Area 9. J-Pit

The J-Pit is a 114 acre former gravel pit and sand quarry located on the southwest side of Gary, north of I-80/I-94 and east of Cline Avenue. This property is subject to a U.S. Environmental Protection Agency (USEPA) Brownfields Assessment Demonstration Pilot Grant which includes potential greenspace protection and development. The property includes remnant dune and swale and black oak savanna habitats.

Wetlands

"Wetlands" are defined by the U.S. Army Corps of Engineers (USACOE) for jurisdictional purposes as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions". Impacts to wetlands are regulated by the USACOE and the Indiana Department of Environmental Management.

Wetland resources in Gary are primarily located along waterways and within remnant dune and swale areas as well as industrial areas. Wetlands present in the City of Gary were identified during field review and through use of the National Wetland Inventory maps. The Advanced Identification of Wetlands (ADID) maps were also obtained from the Northwest Indiana Regional Planning Commission. The ADID is a planning process used to identify wetlands and other waters that are generally suitable or unsuitable for the discharge of dredged and fill material. It generally identified high quality wetlands in Lake and Porter Counties.

The Grand Calumet River corridor has wetlands scattered along its length with more ADID wetlands being present near the Gary Airport. A larger number of wetlands are likewise

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located in the floodplain along the Little Calumet River on the south side of Gary. ADID wetlands are also concentrated in the Miller section of Gary associated with the Indiana Dunes National Lakeshore .

Endangered Species

Federally endangered species known to exist within the City of Gary include the karner blue butterfly, the piping plover, and Pitchers thistle (*Cirsium pitcheri*). The karner blue butterfly is present at the east side of Gary in the Indiana Dunes National Lakeshore property and adjacent Northern Indiana Public Service Company (NIPSCO) rights-of-way. It is also known to occur at the Ivanhoe Nature Preserve. The piping plover has been reported from the Lake Street Beach area in eastern Gary. Pitcher's thistle has been reported from beach blowouts in the Miller section of Gary. The City is within the range of the Indiana bat (*Myotis sodalis*), and the bald eagle (*Haliaeetus leucocephalus*). The Indiana bat prefer woodland habitat, primarily along stream corridors, in summer for formation of maternity colonies. The Indiana bat utilizes trees with loose bark for roosting. The bald eagle nests near rivers, lakes and reservoirs. Neither the Indiana bat or bald eagle are reported from Gary.

Environmental Corridors

The Grand Calumet River and the Little Calumet River are the primary environmental corridors in the City of Gary. The Grand Calumet River has been designated as one of the 42 Great Lakes Areas of Concern (AOC) by the International Joint Commission. The International Joint Commission is an independent binational organization established by the Boundary Waters Treaty of 1909. Its purpose is to help prevent and resolve disputes relating to the use and quality of boundary waters and to advise Canada and the United States on related questions. Both the Grand Calumet River and Indiana Harbor Ship Canal are heavily contaminated and clean-up measures are underway. The Citizens Advisory Committee for Remediation of the Environment (CARE) prepared a Remedial Action Plan (RAP) for the region. Eating fish from or having body contact with these waters is not recommended as posted on signs along the waterway.

Regulatory agencies including the USEPA and IDEM have conducted several special initiatives in the AOC including enforcement actions. Federal and state trustees for the Natural Resource Damage process are implementing the "Assessment Plan for the Natural Resource Damage Assessment for the Grand Calumet River, Indiana Ship Canal, Indiana Harbor and Associated Lake Michigan Environments". This plan includes an assessment of injury to the environment from releases of oil and hazardous substances and a determination of actions to be taken to restore natural resources and compensate for loss of public services such as wildlife habitat and fishing opportunities.

The U.S. Steel Corporation has dredged the eastern 5 miles of the Grand Calumet River for contaminated sediments. The western reach will be dredged with a 58 million dollar Natural Resource Damage Assessment by eight companies. River restoration is being carried out under several programs by the USACOE and the City of Gary. Although the point discharges into the Grand Calumet River have improved in terms of water quality, the sediments are still highly contaminated.

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The Grand Calumet Task Force authored the Grand Calumet River/Indiana Harbor Ship Canal Corridor Vision in 2000. The document provides details on the conditions in these waterways. Of note, the document identified Core Biodiversity sites (minimum of 40- acre sites with high quality habitat) and Supplemental Habitat Sites (sites with moderate to extensive disturbance and moderate to low species diversity) in the AOC. In Gary, the Clark and Pine Addition # 1 (located south of the nature preserve) and the Brunswick Savanna were identified as Core Biodiversity sites. Eleven properties were identified as Supplemental Habitat sites with all being located near the west side of Gary and the Chicago/Gary Airport.

The Grand Calumet and Little Calumet Rivers have potential as an environmental corridor as noted by the Gary Green Link Plan. The Grand Calumet River has greenspace and wetlands along its length in Gary. In between the levees of the Little Calumet River are large open spaces and wetlands available for restoration. Restoration of existing open space properties could enhance the value of the Grand Calumet River and Little Calumet River as a biodiversity and dispersion corridor for terrestrial and aquatic species. Given that the existing natural areas are now poorly interconnected, this environmental corridor is important for the continued biodiversity of the region.

Opportunities and Constraints

The following opportunities and constraints have been noted for the City of Gary, Indiana:

- Environmental/recreational corridor related opportunities as noted in the Gary Green Links Plan
- Lakeshore redevelopment opportunities as noted in the Marquette Reinvestment Study
- Connection of high quality natural areas via environmental corridors for biodiversity retention and enhancement
- Environmental tourism of high quality natural areas
- The presences of state and federal protected species within City limits
- Brownfield redevelopment

